(No Model.) 2 Sheets—Sheet 1.

C. W. HOLBROOK.

COIN SIGNAL SOUNDING DEVICE.

No. 481,903. Patented Aug. 30, 1892.

Fig. 1.

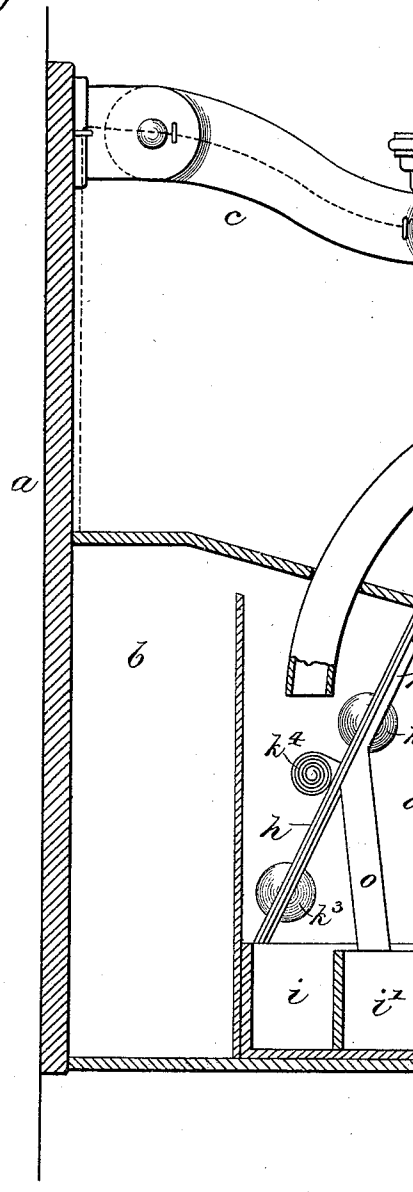
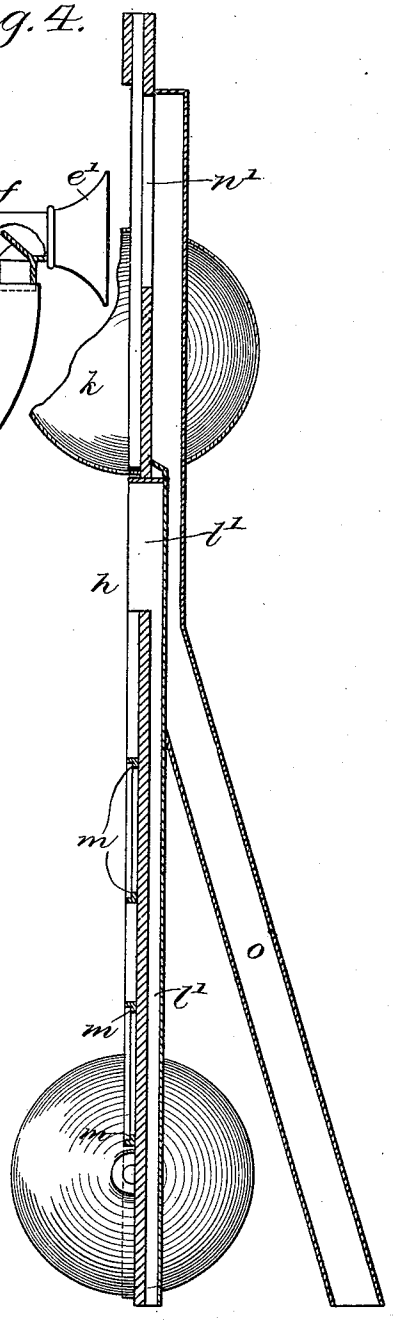


Fig. 4.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

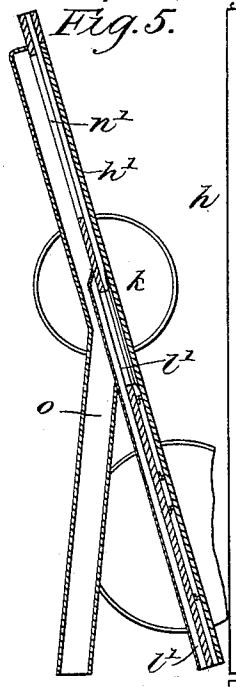


Fig. 2.

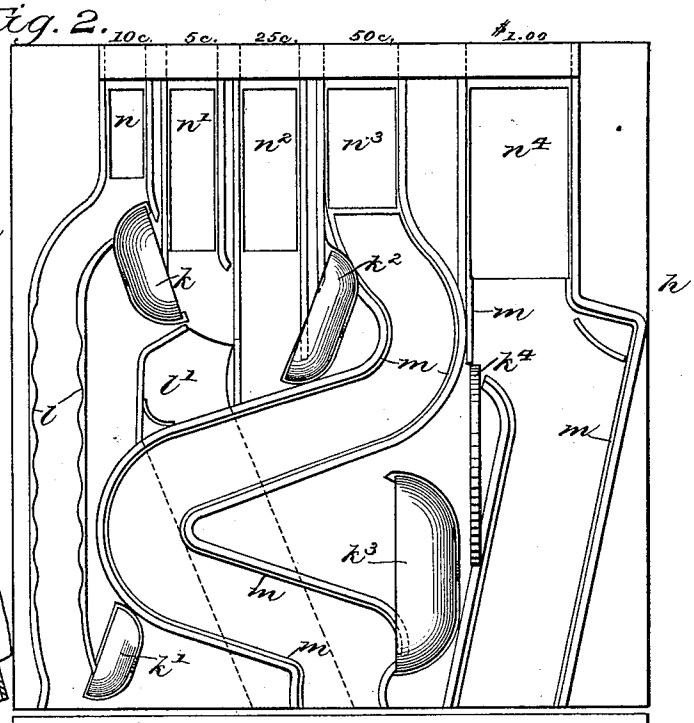
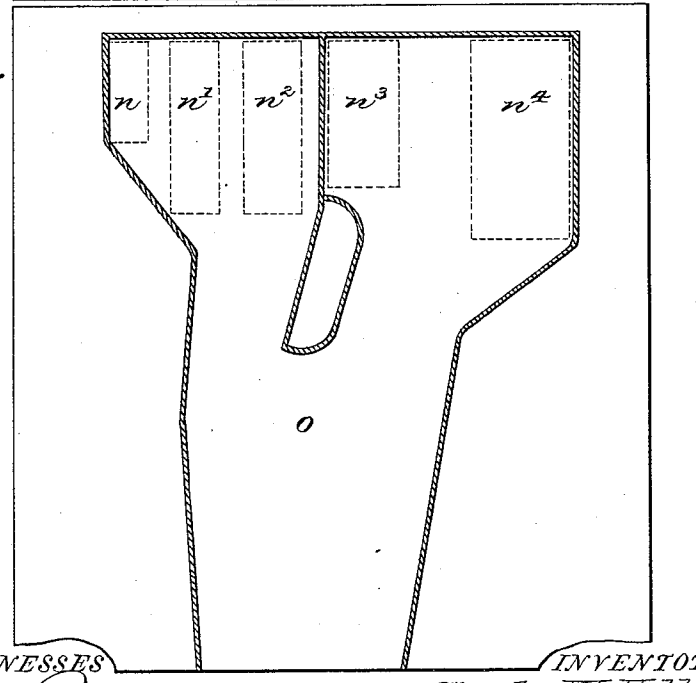


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES W. HOLBROOK, OF WINDSOR LOCKS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE GRAY AUTOMATIC TELEPHONE PAY STATION COMPANY, OF HARTFORD, CONNECTICUT.

COIN SIGNAL-SOUNDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 481,903, dated August 30, 1892.

Application filed November 28, 1890. Serial No. 372,848. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. HOLBROOK, of Windsor Locks, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Coin Signal-Sounding Devices, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a device by means of which a coin may be used to sound a signal in its passage along the guideway or channel, means being provided to automatically prevent the use of an improper coin and to keep those coins that have served the purpose in sounding a signal separate from those that have not been so used after having been dropped into the apparatus; and a further object is to provide a simple and compact arrangement of coin-channels and sounding devices in convenient form for use in connection with a telephone apparatus.

My invention consists in the combination of the several parts making up the apparatus as a whole and in details of construction of the several parts, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a view in side elevation of the apparatus in connection with part of a set of telephone-instruments, part being broken away to show construction. Fig. 2 is a detail view, in front elevation, of the signal part. Fig. 3 is a detail view, in elevation, of the coin-trap. Fig. 4 is a detail view, on enlarged scale, in cross-section through the parts, illustrating the construction of the several channels and guideways looking toward the left from the plan of section. Fig. 5 is a detail view, in cross-section, through the signal-plate, looking toward the right.

In the accompanying drawings, the letter *a* denotes the back board, to which is secured the battery-box *b* and the arm *c* that supports the transmitter and mouthpiece of a portion of a set of apparatus such as is used in connection with the telephone. A portion of the box *b* is divided off to form a signal-chamber *d*, within which is the apparatus used to indicate by a signal the amount of money paid as toll for the use of the telephone. This signaling apparatus is one that is operated by mechanical means as distinguished from those in which the coin is used for the purpose of making or breaking contact in a line of connected wires depending upon electricity as the immediate means of delivering a signal. The transmitter *e* is adjustable as to elevation, being supported on a flexible arm that is jointed so as to enable the mouthpiece *e'* to be raised or lowered in order to accommodate it to the height of the speaker using the telephone. Between this mouthpiece *e'* and a transmitter *e* a T *f* is introduced, an inclined diaphragm *f'* extending diagonally from the bottom of the T and forming a deflector to deflect the sound that comes through the extensible connection *g* from the signal-box *d* to the transmitter *e*. This extensible connection is tubular and may be made either of a piece of flexible tubing or may be made in sections that are extensible, as by telescoping one within the other, or it may be slid in a socket in the top of the signal-box. This flexible connection provides for a certain conveying of the sound from the signal-box to the transmitter while permitting a vertical adjustment of the latter.

Within the signal-box *d* there is arranged a signal-plate *h* in an inclined position across the box, the lower end of the coin-channel in this plate delivering into a section *i* in the drawer, while other coins, that for the purpose of description will be called "false coins," will be delivered into a particular section *i'* in the money-drawer by means of the several devices to be described. In this signal-plate *h* the several coin-channels are arranged side by side in such position that the coins are introduced flatwise to the plate into the mouth of the coin channel or cut in which the specific coin belongs. In the form shown the receiving ends of the several coin-channels are arranged in line across the plate and in succession, the coin representing ten cents having the left-hand channel, as shown in Fig. 2 of the drawings, with the five-cent channel next, and the twenty-five and fifty cent and the one-dollar channels following in succession.

The coin channels or guides are intended and are used for the purpose of directing the coins in their fall against the bell or other signal-sounding devices that are arranged so as to be struck by the coin in its descent. To the signal-plate are secured the bells *k k' k²*

k^3 and a chime k^4, several of the bells projecting into two separate coin-channels. The bell k, for instance, presents one edge in position to be struck by a ten-cent piece, while its other edge is presented in such position as to be struck by a five-cent piece, while each of the separate coins are moving in their appropriate guides or channels. The coin-channel appurtenant to the ten-cent piece is arranged so that the bell k is struck near the beginning of the descent of the coin, and at a later period of time the bell k' is struck by the same coin, thus designating by the sounding of two separate signals the fact of the payment of the ten cents. The five-cent coin strikes but a single note to indicate the payment of that amount.

It is desirous that a certain interval of time should elapse between the striking of two signals by any given coin, and in order to provide for the necessary delay in the descending motion of the coin the opposite walls of the guideway or channel may be provided with a series of indentations, as shown in Fig. 2, so that a coin moving from one to the other across the channel is delayed in its descent a sufficient time, depending upon the number of such indentations l. Another means for providing for the delay is illustrated in the curved channel or guideway provided for the fifty-cent piece, the coin, after having struck the first bell k^2, following a zigzag course down the channel before it reaches the bell k^3.

In order to prevent any rattling of the coins in the channels or guideways, narrow tracks m are preferably provided, so that the coin is lifted out of contact as to the greater part of its surface with the side walls of the guideways. Several of the channels (those for the ten-cent, the fifty-cent, and the one-dollar coins) are all arranged practically on one side of the plate, while the channels for the five and twenty-five cent pieces deliver into a channel l', that conducts the coin along the back of the plate, all of these channels, however, delivering the proper coin into a certain section i of the money-box.

In order to prevent any coin but the proper one from being used to operate a certain signal, a series of traps n, n', n^2, n^3, and n^4 in the under walls of each of the guideways is provided, so that any false coin—that is, one that does not properly belong in the given channel—will drop through the trap and into a runway o, through which it will be delivered into a section i in the money-box. These coins will be lost to any one attempting to use them, and the device has the further advantage of enabling the owner of the toll-collecting apparatus to determine what coins have been used in payment for services actually rendered by the telephone company. As none of the false coins strike any signal, no service is rendered by the company on account of the payment of such coins into the toll-box. All of these several coin-channels are preferably formed in a single plate of some material, as metal, that is not subject to an undue amount of change under differences of temperature or weather, and the several signals, whether bells, chimes, or other sounding devices, are all preferably supported on a single plate, which may be conveniently fitted into any desirable form of inclosing box. A cover h is provided that overlies the surface of the plate h, so as to form practically a fourth wall for the several guideways, making the channels practically tubular in form, although so long as the channels answer the function as guides that direct and control the movement of the coins it is not material how they shall be formed as to the several sides.

In the operation of my device any one wishing to use the telephone rings up the central office, asks of the operator whether the desired connection can be made with a subscriber, and if the user is answered in the affirmative he then drops the amount of toll into the proper coin-channel, and the coin striking a signal indicates to the operator at the central office that the proper toll has been paid, the several coins being distinguished, as has already been described, either by a given note or by a given number of signals.

I claim as my invention—

1. In a telephone-toll collector, in combination, a signal-plate having a series of coin channels or guides located side by side across the plate, a trap for the passage of the false coins formed in the walls of the coin-channel and an outlet-channel extending from such traps, and a coin-box having separate receptacles appurtenant to the serviceable and the false coins, respectively, all substantially as described.

2. In a telephone-toll collector, a signal-plate having a series of coin-channels arranged in succession across the plate, and the signal-bells projecting into one or more of the separate coin-channels, all substantially as described.

3. In a telephone-toll collector, a coin-channel having an irregular surface forming the coin-retarding device, and two or more signal-bells projecting into the path of movement of the coin and between which the retarding device is located, all substantially as described.

4. In a telephone-toll collector, in combination, a transmitter borne on an adjustable arm, an extensible tubular connection having a deflector at the upper end and extending from the transmitter to the signal-box, the signal-box containing the coin-plate and coin-receiving drawer, and the coin-plate having a series of coin-channels arranged across the plate with traps and a separate outlet for false coins, the several bells secured to the signal-plate, and the money-drawer divided into compartments to receive the separate classes of coins, all substantially as described.

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